Panasonic®

Personal Computer

Reference Manual

Model No. **CF-48 Series**

TOUGHBOOK

Contents

Read Me First 2
Key Combinations 3
LED Indicators 4
Touch Pad (Advanced) 5
Standby/Hibernation Functions 7
Security Measures 11
Computing on the Road 16
Battery Power 18
CD Drive 22
PC Cards 26
RAM Module 28
Port Replicator 29
Printer 30
External Display 31
USB Devices 33
Modem 34
LAN 36
Hard Disk Drive 38
Setup Utility 39
Technical Information 44
DMI Viewer 45
List of Error Codes 46
Dealing with Problems (Advanced) 48

When the cursor is moved to an item under [Contents] or to ☞ page (green display), the shape of the cursor will change to ☝. Under this condition, if characters are tapped (or a click is made), the corresponding page in the Reference Manual will be displayed.

We recommend that this Reference Manual be printed.

Terminology used in this Reference Manual

The following terminology is used in this Reference Manual particularly when notes are not used.

- Circular media such as CD-ROM and DVD-ROM are described as “discs”. (With the Setup Utility, CD-ROM and DVD-ROM are described as “CD”).
- In the case of a model with a DVD-ROM drive, a model with a CD-R/RW drive or a model with a DVD-ROM & CD-R/RW drive, change “CD-ROM drive” to read “DVD-ROM drive”, “CD-R/RW drive” or “DVD-ROM drive & CD-R/RW drive”, respectively.
- If the user has logged on without “Administrator authority,” some functions may not be executable, and some screens may be not displayed as shown in this manual. If this happens, log on with Administrator authority to enable these functions.

Illustrations used in this Reference Manual

NOTE:	**NOTE** provides a useful fact or helpful information.
CAUTION:	**CAUTION** indicates a condition that may result in minor or moderate injury.
WARNING:	**WARNING** indicates a hazard that may result in moderate or serious injury.
[Start]-[Shut Down]:	This illustration means to click [Start], then to click [Shut Down]. ● For some applications, you may need to double-click. ● In Windows XP, [Start] is displayed as [start].
Enter :	This illustration means to press the [Enter] key.
Fn + F5 :	This illustration means to press and hold the [Fn] key, then press the [F5] key.
Windows 2000 :	Information for Microsoft Windows® 2000 Professional users.
Windows XP :	Information for Microsoft Windows® XP Professional users.
☞ page:	When the cursor is moved to an item under [Contents] or to ☞ page (green display), the shape of the cursor will change to ☝. Under this condition, if characters are tapped (or a click is made), the corresponding page in the Reference Manual will be displayed.
☞ 📖 :	This illustration means to refer to the Operating Instructions.

- Some of the illustrations in this manual may differ slightly in shape from the actual items in order to make the explanation easier to understand.

Key Combinations

CAUTION

- Do not press the following key combinations repeatedly in (quick) succession.
- Do not press the following key combinations while using the touch pad (mouse) or other keys.

NOTE

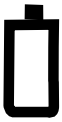
Windows XP

When switching to a different user with the Fast User Switching function, these key operations may not work. If this is the case, log off, then log on again and try the operation once more.

Key	Functions		Popup Window
Fn + F1 Fn + F2	**LCD brightness control (▼down)** **LCD brightness control (▲up)**	Pressing this key combination adjusts the brightness of LCD. The brightness setting is stored in memory separately under the condition the AC adaptor is connected and under the condition the AC adaptor is not connected.	
Fn + F3	**Display change**	By pressing this key combination, you can select either an external display, LCD or simultaneous. (☞ page 31)	
Fn + F4	**Speakers on/off switch**	Pressing this key combination turns on/off audio from the internal speakers and headphone jack. Rebooting the computer, or powering off then on, restores the speaker setting of the Setup Utility. **CAUTION** Disabling the speakers will also disable the warning beep.	**OFF** **ON**
Fn + F5 Fn + F6	**Volume control (▼down)** **Volume control (▲up)**	Pressing this key combination adjusts the volume of the internal speakers and headphone jack. **NOTE** This key combination cannot be used to adjust the volume of the warning beep.	**Down** **Up**
Fn + F7*	**Power off using the standby function**	Pressing this key combination causes the current screen on the display to be saved to memory, and powers off the computer. (☞ page 7)	
Fn + F9	**Remaining capacity of the battery pack**	Pressing this key combination displays the remaining battery capacity on the screen. (☞ page 18)	**Remaining capacity (%) display** **Battery pack is not installed.**
Fn + F10*	**Power off using the hibernation function**	Pressing this key combination causes the current screen on the display to be saved to the hard disk, and powers off the computer. (☞ page 7)	

***** When [Disable] is set for [Fn+F7/Fn+F10 Key] with the Setup Utility, these key combinations become inoperable.

LED Indicators

	Caps Lock	This indicator lights green when **Caps Lock** is pressed. Subsequent non-shifted input is capitalized.
	NumLk (Numeric key)	This indicator lights green when **NumLK** is pressed. This causes a portion of the keyboard to function as a numeric keypad. The [Enter] key functions differently depending on the application. (If an external keyboard or ten-keyboard is connected to the external keyboard/mouse port, the numeric keypad of the internal keyboard will not operate.)
	ScrLk (Scroll lock)	This indicator lights green when **ScrLK** is pressed. Scroll lock functions differently depending on the application.
	CD drive status	This indicator lights when the CD drive is accessed.
	Floppy disk drive status	This indicator lights when the floppy disk drive is accessed.
	Hard disk drive status	This indicator lights when the hard disk drive is accessed.
	**Battery pack status**	**Not lit**: AC adaptor not connected or charging not being performed. **Orange**: Charging in progress. **Green**: Charging finished. **Red**: Battery is low (remaining battery capacity is approx. 9% or less). **Blinking red**: Battery pack or charging malfunction. **Blinking orange**: Unable to recharge due to violation of temperature limits. (The ambient temperature is outside the allowable range. Once the allowable range requirement is satisfied, charging begins automatically.)
	Power status	**Not lit**: Power off / Hibernation mode **Green**: Power on **Blinking green**: Standby mode

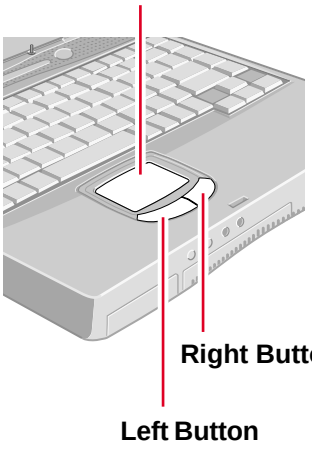
Touch Pad (Advanced)

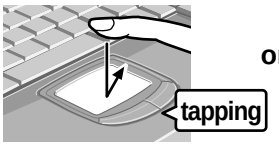
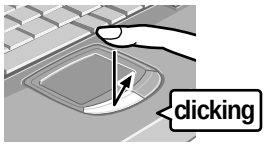
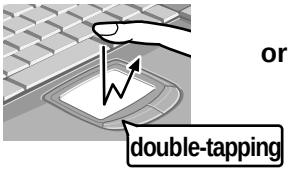
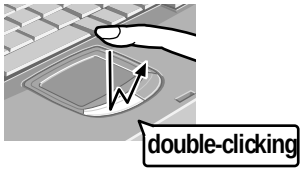
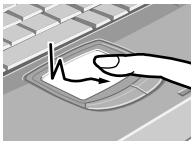
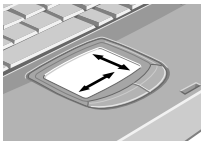
Use the touch pad to move the cursor on the display and perform normal computer operations.

NOTE

- The touch pad has been designed to work only when a finger is used. Therefore, do not use any implement on the touch pad.
- The double-tapping speed of the touch pad cannot be changed.

Basic Operation



Function	Touch Pad Operation
Moving the Cursor	Move the tip of your finger lightly over the surface.
Tapping/Clicking	 or 
Double-Tapping/ Double-Clicking	 or 
Dragging	 or Two quick taps, but on the second tap leaving your finger down (applying pressure) and moving it on the work surface. While holding down the button, moving your finger on the work surface. ● **When a check mark ✓ is added for [Locking Drags]** *1 After the drag operation (above: left side), it is necessary to determine the destination (i.e., location of drop) by one tap. Under the condition no destination is selected, do not use the standby or hibernation function. Nothing is shown on the display, even after resuming from the standby or hibernation mode. In this case, the display will return after a tap or click is made. *1 Windows 2000 : In [Start] - [Settings] - [Control Panel] - [Mouse] - [Touch] Windows XP : In [start] - [Control Panel] - [Printers and Other Hardware] - [Mouse] - [Touch]
Scroll Scroll a document (The movements will differ depending on the application.)	

Besides the above operations, operations such as Zoom and Pan are possible by allocating these functions to the buttons and/or pad. For more details, refer to [Help]*2.

*2 Windows 2000 : In [Control Panel] - [Mouse]
Windows XP : In [Control Panel] - [Printers and Other Hardware] - [Mouse]

(To next page)

CAUTION

The operations of Scroll, Pan or Zoom will differ depending on the application. There are cases the touch pad will not support these operations even with an application that supports the functions.

When you want to use an external mouse through the external keyboard/mouse port

If you are using a USB mouse, the following operation is unnecessary.

1 Windows 2000
Select [Synaptics TouchPad] in [Control Panel] - [Add/Remove Programs] and remove it.
Windows XP
Select [Synaptics TouchPad] in [Control Panel] - [Add or Remove Programs] and remove it.

NOTE

The touch pad can only be uninstalled by the administrator. Ask the administrator when you want to uninstall the touch pad.

2 Restart the computer and run the Setup Utility (☞ page 39)
3 In the [Main] menu, set [Touch Pad] to [Disable].
4 Connect an external mouse and restart the computer.
5 After Windows starts up, follows the instructions for the mouse.

NOTE

If an external mouse is connected to the external keyboard/mouse port while the touch pad is being used, the touch pad and external mouse will both come to operate as a two-button mouse. All other functions will no longer operate.

When you want to re-enable the touch pad

1 Uninstall the driver of the external mouse by following the manual for the mouse.
2 Restart the computer and run the Setup Utility (☞ page 39)
3 In the [Main] menu, set [Touch Pad] to [Enable].
4 After Windows starts up, run [c:\util\drivers\mouse\setup.exe] in [Start] - [Run] and follow the on-screen instructions.

Handling the Touch Pad

- Do not place any object on the work surface or press down forcefully with sharp-pointed objects (e.g. nails), hard objects that can leave marks (e.g. pencils and ball point pen).
- Do not allow things that could dirty the touch pad, such as oil. The cursor may not work properly in such cases.
- When the touch pad becomes dirty:
  Wipe to remove dirty areas by using a dry soft cloth such as gauze or a soft cloth first applied with detergent diluted with water and then thoroughly wrung.
  Do not use benzene or thinner, or disinfectant-type alcohol.

Starting Up Your Computer Quickly

If you want to immediately start up and continue an application after shutting down your computer, you can do so by using either the standby or hibernation function.

● Differences between the standby and hibernation functions

Function	Standby function	Hibernation function
Where data is saved to	Memory	Hard disk
Speed	Fast	Somewhat slow
Requires power supply	Yes (if power is cut, all data is lost)	Power is not required to maintain data

NOTE

If the computer will not be operated for an extended period of time, it is recommended that hibernation mode be used instead of the standby mode.

Setting the Standby or Hibernation Function

Windows 2000

1 **Select [Start] - [Settings] - [Control Panel] - [Power Options], in [Hibernate] add the check mark for [Enable hibernate support] and select [Apply]**

2 **In [Advanced], select [Standby] or [Hibernate] for [When I press the power button on my computer], then select [OK]**

Windows XP

1 **Select [start] - [Control Panel] - [Performance and maintenance] - [Power Options], in [Hibernate] add the check mark for [Enable hibernation] and select [Apply]**

2 **In [Advanced], select [Stand by] or [Hibernate] for [When I press the power button on my computer], then select [OK]**

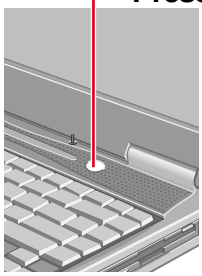
NOTE

The operation of the computer when the LCD is closed can also be set in [Advanced].

Shutting Down Using the Standby or Hibernation Function

The computer should be set for standby or hibernation (page 7).

Press the power switch; at the "beep*" sound, release your finger.



(After releasing your finger from the power switch, do not touch the power switch until the power indicator goes off or blinks.)

Standby Mode or Hibernation Mode

CAUTION

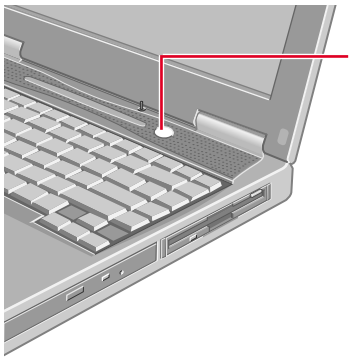
- At the "beep*" sound, release your finger from the power switch. If you continue to press down on the switch and hold it for more than four seconds, the unit will emit a second "beep*" then power off. Data not previously saved will be lost.
  Windows 2000
  Even when [When I press the power button on my computer] is set to [Power Off] with [Control Panel] - [Power Options] - [Advanced], if the power switch is pressed, a beep will sound and the power will go off if the switch is pressed for more than four seconds, although the computer will not completely shut down.
  Windows XP
  Even when [When I press the power button on my computer] is set to [Shut down] with [Control Panel] - [Performance and Maintenance] - [Power Options] - [Advanced], if the power switch is pressed, a beep will sound and the power will go off if the switch is pressed for more than four seconds, although the computer will not completely shut down.

* When the speaker function is disabled, e.g., by setting [Disable] for [Speaker] with the Setup Utility (page 40) or by the key combination Fn + F4, there will be no beep sound.

NOTE

- With the method below, you can shut down the computer by using the standby function.
  - Fn + F7 (page 3)
  - Windows 2000
    In [Start] - [Shut Down], select [Stand by].
    Windows XP
    In [start] - [Turn Off Computer], select [Stand By].
- With the method below, you can shut down the computer by using the hibernation function.
  - Fn + F10 (page 3)
  - Windows 2000
    In [Start] - [Shut Down], select [Hibernate].
    Windows XP
    In [start] - [Turn Off Computer], press and hold Shift, then select [Hibernate].

Resuming Operation



When the computer enters either the standby or hibernation mode by the closing of the LCD panel, it will resume when the LCD panel is opened. If the computer does not resume when the LCD panel is opened, press the power switch.

Windows XP

If settings have been made for multiple users, select the “User” when operations resume.

CAUTION

- After the display returns, the computer needs a short period of time to reinitialize. This takes about 30 seconds. Do not shut down or restart Windows, or enter either the standby or hibernation mode again during this time, as this may subsequently cause Windows to operate abnormally.
- Do not install or remove peripherals while your computer is in the standby or hibernation mode; abnormal operation may result.
- When operation resumes, serial devices such as a mouse, modem or PC Cards may not function properly. In such cases, you will need to restart your computer or reinitialize the individual devices.
- Avoid the following until the power is completely turned off when turning off the computer by using the standby or hibernation functions, or resuming operation from the standby or hibernation.
  - Touch the keyboard (excluding password input), touch pad, or power switch.
  - Connect or disconnect the AC adaptor.
  - Close the display.
- Even when a password has been set in the Setup Utility, does not appear when the computer resumes from the standby or hibernation mode.
  If you want to use the security function when using the standby or hibernation mode, use the Windows password as follows:
  Windows 2000
  Set the password in [Control Panel] - [Users and Passwords], then add the check mark for [Prompt for password when computer goes off standby] in [Control Panel] - [Power Options] - [Advanced].
  Windows XP
  Select the account to change in [Control Panel] - [User Account] and set the password, then add the check mark for [Prompt for password when computer resumes from standby] in [Control Panel] - [Performance and Maintenance] - [Power Options] - [Advanced].

Precautions for Using the Standby or Hibernation Function

- Do not use the standby or hibernation function when using the network function.
- Save all data before powering off your computer.
- When restarting from or shutting down to the standby or hibernation mode, do not touch the touch pad (or move the mouse if one is connected). These devices may fail to operate, you will then need to restart your computer using the keyboard.
- Do not enter the standby or hibernation mode during the following periods (you may corrupt your data or file):
  - While the floppy disk drive indicator (), hard disk drive indicator () or CD drive indicator () is on.
  - While playing/recording audio files and displaying images (such as JPEG files).
  - While communications software is being used.
- Do not enter the standby or hibernation mode during the following periods. The standby or hibernation function may not work, or the computer (or peripherals) may fail to work properly.
  - When a file in an external device such as a CD drive, external hard disk, or ATA card is opened, the standby or hibernation function may not work. In such cases, close the file.
  - LAN cards (port), SCSI cards and modem cards (port) etc. may not recover after entering the standby or hibernation mode. If this occurs, restart the computer.
  - When a USB device is in use or is connected to the computer (note: only for some USB devices). If this occurs, remove the USB device temporarily and restart the computer.
- Do not enter the standby or hibernation mode when using an operating system other than the one that comes with your computer, the Setup Utility, or when experiencing static electricity or noise.
- If you hold down on **Alt**, **Ctrl** or **Shift** to enter the standby or hibernation mode, after resuming operation, you must press the same key. For example, if you hold down on **Shift** while pushing the power switch, upon resuming, if you do not press **Shift** again, only capital letters will result from typing.
- Press the power switch and hold it for more than four seconds to power off the computer only when the computer locks up. Data not previously saved will be lost.
- In the standby mode, power is consumed. If PC Cards are inserted, more of that power is consumed. When all power has been consumed, all data saved at standby is lost since it is retained in memory. We therefore recommend plugging in the AC adaptor when using the standby function.
- If the standby or hibernation function is used repeatedly, the computer may not work properly. To stabilize computer operations, we recommend shutting down Windows on a regular basis (about once a week) without using the standby or hibernation function.
- The screen that is displayed when resuming from the hibernation mode may be different from the screen that is displayed before entering the hibernation mode.

Security Measures

To prevent unauthorized access of your computer, the various security measures are provided below.

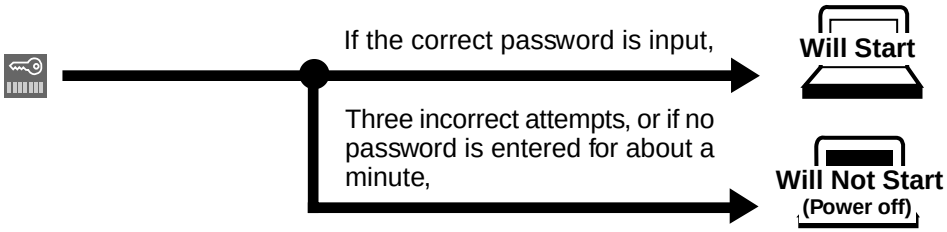
Situation	Function to use	Reference
You do not want your computer to be used without permission	Supervisor Password User Password	☞ below
You do not want the data on the hard disk to be read, or data to be written to the hard disk, in cases including theft.	Hard Disk Lock	☞ page 14
You want to prevent theft or damage to data by using a floppy disk	Prevent operation by using a floppy disk	☞ page 15
You want to prevent theft of your computer	Use security lock	☞ “Names and Functions of Parts”

When you do not want your computer to be used without permission

You should set your “Supervisor Password” and “User Password” (The User Password can only be set when the Supervisor Password has been set).
Without the password, access to your computer is impossible.

● Starting up when the password is set

(When [Password on boot] of the [Security] menu is set to [Enable].)
Upon entering your password* and pressing **Enter** .


If the correct password is input,
Will Start
Three incorrect attempts, or if no password is entered for about a minute,
Will Not Start
(Power off)

* Password set in the Setup Utility (not the Windows password).

● If entering the Setup Utility with Supervisor Password

You can register all items of the Setup Utility (☞ page 39).

● If entering the Setup Utility with User Password

- You can not register [Advanced] menu and some items in [Security] menu.
- When [User Password Protection] has been set to [Protected], you can not register the User Password.
- **F9** does not work.

NOTE

When [Password on boot] in the Setup Utility is set to [Disable], the password is not necessary when the computer is started up, but the password becomes necessary when the Setup Utility is started up. This alternative makes it possible to prevent the contents of the Setup Utility from being changed.

Setting the Supervisor Password (enabling, changing, disabling)

1 **Run the Setup Utility** (☞ page 39)

2 **Using → and ←, select [Security]**

3 **Using ↑ and ↓, select [Set Supervisor Password] and press Enter**

4 **<Only when the Supervisor Password has been set>**
Enter your password at the [Enter Current Password] and press Enter

5 **Enter your password at the [Enter New Password] and press Enter**

● **To disable the Supervisor Password**
Press only Enter

NOTE

- Your password will not be displayed on the screen.
- Limit your password to seven characters. Note that there is no distinction between upper and lower case letters.
- Only the alphabet keys or number keys can be used. Note that the space bar and function keys cannot be used.

6 **Re-enter your password at the [Confirm New Password] and press Enter**

● **To disable the Supervisor Password**
Press only Enter

7 **At the [Setup Notice], press Enter**

8 **Press F10 and select [Yes], then press Enter**

CAUTION

- Do not input your password while holding down on Shift or Ctrl .
- Use only the upper horizontal row of numeric keys to input your password.
- Do not forget your password. If your Supervisor Password is forgotten you will be unable to use your computer. Contact Panasonic Technical Support.
- When running the Setup Utility, do not leave your computer even for a short time, as the possibility exists for the password to be set/changed by another person.

Setting the User Password (enabling, changing, disabling)

1 **Run the Setup Utility** (☞ page 39)

NOTE

When the Supervisor Password has not been set, the User Password can not be set.
Set the Supervisor Password if you have not done so. (☞ page 12)

2 **Using → and ←, select [Security]**

3 **Using ↑ and ↓, select [Set User Password] and press Enter**

4 **<Only when the User Password has been set>**
Enter your password at the [Enter Current Password] and press Enter

5 **Enter your password at the [Enter New Password] and press Enter**

● **To disable the User Password**
Press only Enter

NOTE

- Your password will not be displayed on the screen.
- Limit your password to seven characters. Note that there is no distinction between upper and lower case letters.
- Only the alphabet keys or number keys can be used. Note that the space bar and function keys cannot be used.

6 **Re-enter your password at the [Confirm New Password] and press Enter**

● **To disable the User Password**
Press only Enter

7 **At the [Setup Notice], press Enter**

8 **Press F10 and select [Yes], then press Enter**

CAUTION

- Do not input your password while holding down on Shift or Ctrl.
- Use only the upper horizontal row of numeric keys to input your password.
- Do not forget your password. If a password is forgotten, you will be unable to use your computer. Contact Panasonic Technical Support.
- When running the Setup Utility, do not leave your computer even for a short time.

NOTE

When you do not want the User Password enabled, changed, or disabled without permission:
1 Using ↑ and ↓, select [User Password Protection] and press Enter
2 Using ↑ and ↓, select [Protected] and press Enter.

When you do not want the data on the hard disk to be read/written

When the Hard Disk Lock is set to [Enable], it is impossible to read/write data from/to the hard disk when the hard disk is installed in a different computer, since a password is also set for the hard disk. When the hard disk is returned to the original computer, you can read and write data as before. In this case, however, make the settings in the Setup Utility exactly the same as they were before the hard disk was removed.
It is possible to set the Hard Disk Lock even if [Password on boot] is set to [Disable], but we recommend that [Password on boot] be set to [Enable] for security reasons.
(Note that this Hard Disk Lock does not guarantee complete protection of data.)

In the default setting, [Hard Disk Lock] is set to [Disable].

NOTE

You cannot set the [Hard Disk Lock] without setting the Supervisor Password. Set the Supervisor Password if you have not done so. (☞ page 12)

Procedure

1 **Run the Setup Utility** (☞ page 39)

2 **Using → and ←, select [Security]**

3 **Using ↑ and ↓, select [Hard Disk Lock] and press Enter**

NOTE

If [Hard Disk Lock] is not displayed, contact Panasonic Technical Support.

4 ● **To enable the Hard Disk Lock**

Select [Enable] and press Enter
At the [Caution], press Enter.

● **To disable the Hard Disk Lock**

Select [Disable] and press Enter

5 **Press F10 and select [Yes], then press Enter**

CAUTION

To technicians (at Panasonic Technical Support):
Before changing the hard disk, be sure to set the [Hard Disk Lock] to [Disable].

Preventing theft or damage to data using a floppy disk

You may choose to protect the data on your computer from being accessed illegally or overwritten accidentally by using a floppy disk. You can also set your computer to be unbootable from a floppy disk.

Procedure

1. **Run the Setup Utility** (☞ page 39)
2. **Using → and ←, select [Security]**
3. **Using ↑ and ↓, select [Floppy Operation] and press Enter**
4. **Using ↑ and ↓, select [Disable] and press Enter**

   ● **To enable the floppy operation**
   Select [Enable].
5. **Press F10 and select [Yes], then press Enter**

Conserving Power

One of the main features of notebook-type computers is that you have the power of computing away from your home or office. In the following, information is provided on how to maximize use of the battery pack which is necessary for such computing.

● Four Important Points

POINT 1 Be sure to charge your battery before and after use.

POINT 2 To get the maximum use of your battery, set the power management mode.

POINT 3 Check to see that you have your AC adaptor with you before leaving your home or office.
Purchasing a spare battery (CF-VZSU18) is highly recommended.

POINT 4 Always watch your battery level!

Things to Remember

● Leave your computer off when it is not in use

(☞ 📖 "Starting Up/Shutting Down")

● Adjust the brightness (darker) with Fn + F1

By holding down on the keys (☼ will be displayed), the degree of brightness will be lowered, thereby lowering the power consumption.

● Before stepping away from your computer, press Fn + F7 or Fn + F10 to put your computer in the standby or hibernation mode (☞ page 3)

● Windows 2000

In [Control Panel] - [Power Options], make settings in detail

By making settings in detail for the timeout, alarm, etc., it is possible to control the consumption of power.

Windows XP

In [Control Panel] - [Performance and Maintenance] - [Power Options], make settings in detail

By making settings in detail for the timeout, alarm, etc., it is possible to control the consumption of power.
By selecting [Max Battery] in [Power Schemes], the battery's operating time can be extended even further.

Windows 2000

● Setting the Intel® SpeedStep™ technology (☞ page 17)

You can control power consumption by setting CPU performance separately for "AC adaptor connected" and "AC adaptor disconnected (i.e., running on batteries)."

CAUTION

When installed in a network environment.
Do not use the standby or hibernation mode.
After resuming operation from the standby or hibernation mode, the network connection may be severed or the computer will not work properly.

When a device like a high-speed modem or ISDN terminal adapter is connected to the serial port, etc.
There are times when high-speed communication is adversely affected if the power management function is enabled.

Key operation and music playback.
When the power management function is running, you may feel that key or touch pad (or mouse) operations are sluggish. Furthermore, music may not be played back correctly when the power of the display is cut (for energy conservation purposes) during playback.

Setting the Intel(R) SpeedStep (TM) technology Windows 2000

You can control power consumption by setting CPU performance separately for “AC adaptor connected” and “AC adaptor disconnected (i.e., running on batteries).” For performance settings, select either [Battery Optimized Performance], [Automatic]* or [Maximum Performance].

* If [Automatic] is selected, the CPU performance is automatically maximized only when necessary. (In contrast, if [Maximum Performance] is selected, the CPU performance is maximized at all times.)

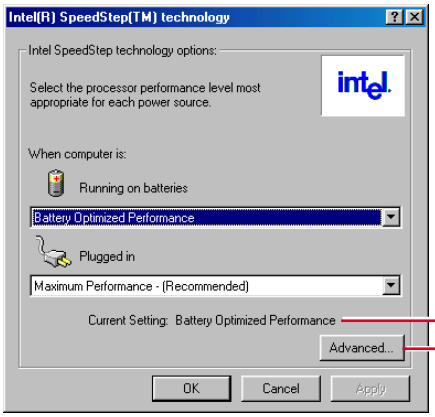
Start-up methods

Select , or on the taskbar

NOTE

Other start-up methods:

- Right-click on either , or , and select [Adjust Properties].
- Choose [Start] - [Settings] - [Control Panel] - [Power Options], and select [Intel(R) SpeedStep(TM) technology].
- Only the Administrator or a Power User can change the Intel SpeedStep technology setting.

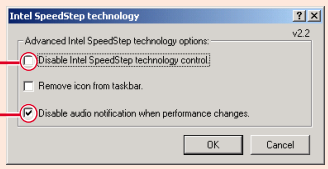


Displays settings currently in effect.

Display detailed settings (☞ screen in the “CAUTION” shown below)

CAUTION

- Do not add the check mark for [Disable Intel SpeedStep technology control].
- Do not delete the check mark for [Disable audio notification when performance changes].



Battery Status

Use the Battery Indicator to Check the Battery Status

Battery Indicator	Battery Status
Orange*	Charging
Green*	Fully-charged
Red	Battery charge is low (the charge is less than approx. 9% capacity)
Blinking red*	Battery pack or charger may not be working properly. Quickly remove the battery pack and disconnect the AC adaptor, then connect them again. If the problem persists, contact Panasonic Technical Support.
Blinking orange*	Unable to recharge due to violation of temperature limits. (The ambient temperature is outside the allowable range. Once the allowable range requirement is satisfied, charging begins automatically.)
Not lit	Battery pack is not connected or charging not being performed.

* When the AC adaptor is connected.

NOTE

This computer prevents overcharging of the battery by recharging only when the remaining power is less than approx. 95% of capacity after the battery is fully charged.

● Getting a detailed reading

Fn + F9 →

NOTE

- The actual remaining battery capacity and the displayed indication may differ.

  - The battery indicator light remains red.
  - The battery remaining displays 99% and the indicator light is orange for a long period of time.
  - Low battery warning appears after a short period of time.
    This may be caused by the use of standby mode for long periods of time. The battery is discharging while the computer is in standby mode when the AC adaptor is not connected.

  → Perform the "Refresh Battery" utility. (☞ page 20)

- When the battery pack is not in the computer, is displayed.
- There may be a discrepancy with the % value that is displayed on the taskbar of Windows, but this is not a malfunction.

Remaining Battery Level Confirmation by Alarm

The computer can be set to notify of a low battery level, etc. using the following menu. When the battery level goes down to the level specified, the computer sets off an alarm and displays a message indicating the low battery level.

Windows 2000

[Control Panel] - [Power Options] - [Alarms]

Windows XP

[Control Panel] - [Performance and Maintenance] - [Power Options] - [Alarms]

- Set the value for the [Critical battery alarm] to 5% or more. This is necessary for the standby or hibernation function to be completed (assuring data is saved) when the battery level is low.
- When making a setting for [When the alarm goes off, the computer will:] in [Alarms]-[Alarm Action], add a check mark for [Force standby or shutdown even if a program stops responding.].
- If the computer shuts down or enters the standby or hibernation mode by the Alarm settings function, start up the computer or resume operations after connecting the AC adaptor. If the computer starts up or resumes while the AC adaptor is not connected, Windows may not operate properly or alarm operations may stop working.
- When disabling the speakers with the Setup Utility (or pressing Fn + F4), the alarm beep is also disabled.

When the Remaining Battery Charge Becomes Low

Save your data and power off your computer

Following that:

- Plug in the AC adaptor, and fully charge your battery.
- Use a spare battery if you have one.
- If you have neither the AC adaptor nor an extra battery, power the computer off.

About High Temperature Mode

This computer has a high temperature mode function that prevents the degradation of the battery in high temperature environments.
We recommend setting the high temperature mode function when installing the computer in a car, etc. To do this, set [Environment] in the [Power] menu of the Setup Utility to [High temperature]. Note that a 100% remaining battery reading in the [High Temperature] mode is about an 80% reading in the [Normal Temperature] mode.
After switching from [Normal Temperature] to [High Temperature], or vice versa, the remaining battery will not be displayed properly until the battery pack is completely discharged or fully charged.

Accurately Displaying Battery Capacity

The battery pack has a function for measuring, storing and learning about battery capacity. Using this function properly to accurately display remaining battery capacity requires that the battery pack be fully charged (charged to 100%), then fully discharged, and then fully charged again.
This procedure should be performed once after you purchase the computer. As you use the battery pack over a long period of time, the remaining capacity display may become inaccurate due to aging of the battery pack and other factors. The procedure described below should be repeated.

1 Attach the battery pack and connect the AC adaptor

Remove all peripherals (except for the battery pack and AC adaptor).

2 Use the “Refresh Battery” utility to fully discharge the battery pack

1. Run the Setup Utility. (☞ page 39)
2. Select [Refresh Battery] from the [Exit] menu and press **Enter** .
3. At the confirmation message, select [Yes] and press **Enter** .
   Once the battery indicator turns green, the battery pack will be completely discharged. It takes approximately 2 hours until the power automatically goes off through the complete discharge of the battery from the fully charged state.

NOTE

If the computer is turned off (electrical power outage, accidental removal of the AC adapter or battery pack, etc.), the battery will not be refreshed correctly.

3 Allow the battery pack to charge until the battery indicator turns green

Replacing the Battery Pack

When the charge provided by your battery pack is supplied for only a short period of time, even after fully charging according to the instructions, it may be time to replace your battery pack. The battery pack is a consumable item and therefore will require replacement (CF-VZSU18).

CAUTION

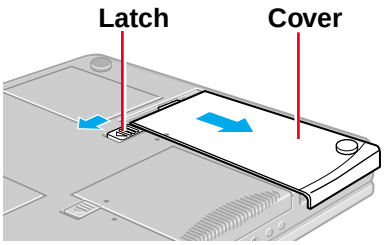
- Do not touch the terminals on the battery pack. The battery pack may no longer function properly if the contacts are dirty or damaged.
- The battery pack is not charged when the computer is first purchased. Be sure to charge it before using it for the first time. When the AC adaptor is connected to the computer, charging begins automatically.
- Use only the specified battery pack (CF-VZSU18) with your computer.

1 Power off your computer (☞ "Starting Up/Shutting Down")

Do not shut down using the standby function.

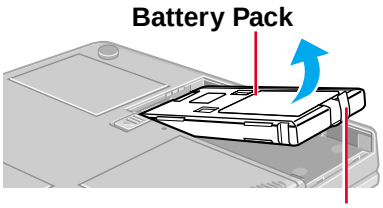
CAUTION

In the standby mode, do not remove/change the battery pack. Removing the pack in the standby mode will erase your data and may damage the computer.



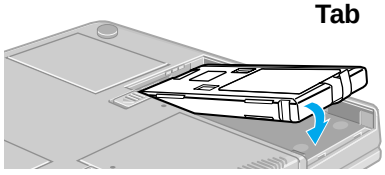
2 Turn your computer over and remove the cover

Slide the latch, and then without releasing it, slide and remove the cover.



3 ● Taking out the battery pack

Pull the tab on the battery pack and remove it from the computer.

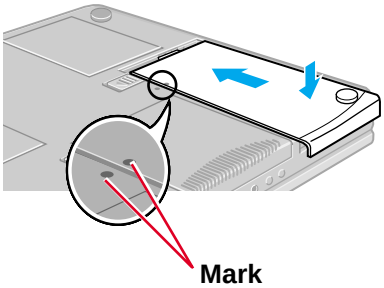


● Inserting a battery pack

Firmly attach the battery pack to the connector.

CAUTION

Be sure the battery pack is properly connected to the connector.



4 Reattach the cover

Match the mark on the cover to the body of the computer and slide the cover back into place.

CAUTION

- For an improperly attached cover, your battery pack may fall out while you are carrying around your computer.
- Be sure the tab does not get caught when closing the cover.

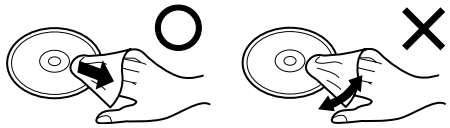
Usage Precautions

- **Do not leave the tray in the open position or touch the lens area.** Should the lens become soiled by dust or dirt, the unit may not read discs properly.
- Do not apply excessive force to the tray in the open position, doing so could damage the tray.
- Do not place items other than discs on the tray.
- Under some conditions, dust may build up on the optical lens or disc, possibly resulting in malfunction.
- Do not expose the CD drive to oily or tobacco smoke. Doing so could shorten the service life of the lens.
- Do not use discs that have become deformed (warped, not completely round, etc.).
- Never insert foreign objects such as paper clips into the slot in the CD drive.
- Do not open the CD drive or move the computer while the CD drive is being accessed. Doing so could cause it to malfunction. In addition, after running an application involving access to a disc, do not open the CD drive or remove the disc until after the application has been closed.
- After closing the tray, do not attempt to access a disc until the CD drive indicator ( ) goes off.
- Cleaning the CD drive using a disc lens cleaner (except a liquid type cleaner) is recommended if it malfunctions.

To avoid damaging discs:

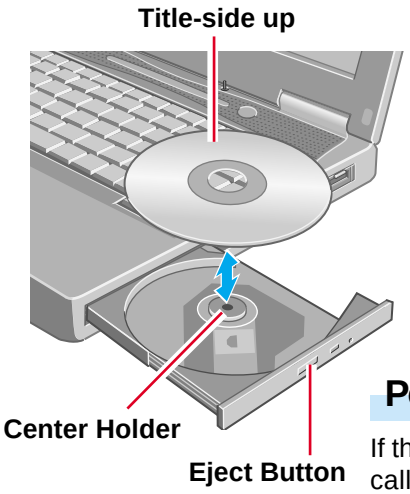
- Do not allow discs to become dirty or scratched.
- Do not place or store discs in locations exposed to heat, direct sunlight, humidity or dust.
- If the disc is brought from a cold into a warm environment, moisture may form on the disc. Wipe this moisture off with a soft, dry, lint-free cloth before using the disc.
- Do not touch the data surface (the side opposite the side with the title printed on it) as it can cause the disc to become dirty or scratched.
- Do not write on the surface of the disc with a ball-point pen or other writing instrument.
- Do not drop, bend, or place heavy objects on top of discs.
- Cleaning the disc using a disc cleaner is recommended once every 2 or 3 months.

If the disc gets dirty



After wiping the disc with a moist, soft cloth, wipe it with a dry cloth. Always wipe from the center toward the edge.

Setting a Disc



1. **Turn your computer on**
2. **Press the disc eject button and slowly pull out the tray**
3. **Place the disc securely on the center holder**
4. **Close the tray**

CAUTION

Do not apply excessive force to the tray in the open position, doing so could damage the tray.

Power-saving Mode

If the CD drive has not been accessed within 90 seconds, the drive motor will automatically shut down to reduce the power consumption. When the CD drive is accessed once again, the power of the drive motor is turned on. However, approximately 30 seconds are required until data is actually read from the disc.

NOTE

If the vibration of the CD drive is excessive, set the [CD Drive Speed] to [Low] in the Setup Utility.

Information for the DVD-ROM Drive (Model with a DVD-ROM Drive)

- To play DVD-Video or MPEG2 files, install the DVD playback software (included). For information on how to install the software, refer to the manual of the software.
- The region code has been set to the following:
  <For U.S.A. and Canada> Set to “1”
  <For Europe> Set to “2”
  Use of another region code or alteration of the region code invalidates the warranty. For more information, contact Panasonic Technical Support.
- If commercially available DVD playback software asks you the region code, set to the following:
  <For U.S.A. and Canada> Set to “1”
  <For Europe> Set to “2”
- The playback of CDs containing moving pictures (Video CDs, CDs including MPEG data, etc.) may not be smooth.

Information for the CD-R/RW Drive (Model with a CD-R/RW Drive)

- When using CD-R or CD-RW discs, read the description on the disc package.
- CD-RW discs cannot be read with other drives* unable to accommodate CD-RW discs.
  * Consult with the manufacturer of each drive.
- The playback of CDs containing moving pictures (Video CDs, CDs including MPEG data, etc.) may not be smooth.

<When writing to CD-R/RW discs>

- Using the CD-ROM of the CD-ROM writer software (included), install the application software on your computer. For information on how to install the software, refer to the included manual of the CD-ROM writer software.
- Be sure to use discs conforming to the proper write speeds.

CD-R write speed	300 KB/s (2X speed) 600 KB/s (4X speed) 1200 KB/s (8X speed)
CD-RW write speed	300 KB/s (2X speed) 600 KB/s (4X speed)
High Speed CD-RW write speed	600 KB/s (4X speed) 1200 KB/s (8X speed)

- If the write operation is to involve a long period of time, be sure to connect the AC adaptor. If the battery power runs low and the power of the computer is cut, the write operation may end in failure.
- Depending on the disc, the quality of the write operation may not be so good. We recommend using any of the following discs.

Recommended Discs:
<CD-R>
- TAIYOYUDEN Co., Ltd.
- MITSUI CHEMICALS, Inc.
- RICOH Co., Ltd.
- MITSUBISHI CHEMICAL Co., Ltd.
- HITACHI MAXELL, Ltd.

<CD-RW/High Speed CD-RW>
- RICOH Co., Ltd.
- MITSUBISHI CHEMICAL Co., Ltd.

Information for the DVD-ROM & CD-R/RW Drive (Model with a DVD-ROM & CD-R/RW Drive)

- To play DVD-Video or MPEG2 files, install the DVD playback software (included). For information on how to install the software, refer to the manual of the software.
- The region code has been set to the following:
  <For U.S.A. and Canada> Set to “1”
  <For Europe> Set to “2”
  Use of another region code or alteration of the region code invalidates the warranty. For more information, contact Panasonic Technical Support.
- If commercially available DVD playback software asks you the region code, set to the following:
  <For U.S.A. and Canada> Set to “1”
  <For Europe> Set to “2”
- When using CD-R or CD-RW discs, read the description on the disc package.
- CD-RW discs cannot be read with other drives* unable to accommodate CD-RW discs.
  * Consult with the manufacturer of each drive.
- The playback of CDs containing moving pictures (Video CDs, CDs including MPEG data, etc.) may not be smooth.

<When writing to CD-R/RW discs>

- Using the CD-ROM of the CD-ROM writer software (included), install the application software on your computer. For information on how to install the software, refer to the included manual of the CD-ROM writer software.
- Be sure to use discs conforming to the proper write speeds.

CD-R write speed	300 KB/s (2X speed) 600 KB/s (4X speed) 1200 KB/s (8X speed)
CD-RW write speed	300 KB/s (2X speed) 600 KB/s (4X speed)
High Speed CD-RW write speed	600 KB/s (4X speed) 1200 KB/s (8X speed)

- If the write operation is to involve a long period of time, be sure to connect the AC adaptor. If the battery power runs low and the power of the computer is cut, the write operation may end in failure.
- Depending on the disc, the quality of the write operation may not be so good. We recommend using any of the following discs.

  Recommended Discs:
  <CD-R>
  - TAIYOYUDEN Co., Ltd.
  - MITSUI CHEMICALS, Inc.
  - RICOH Co., Ltd.
  - MITSUBISHI CHEMICAL Co., Ltd.
  - HITACHI MAXELL, Ltd.

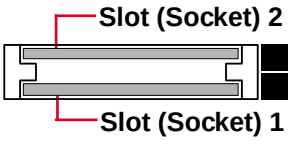
  <CD-RW/High Speed CD-RW>
  - RICOH Co., Ltd.
  - MITSUBISHI CHEMICAL Co., Ltd.

PC Cards

Your computer has two PC Card slots. These slots conform to the PC Card Standard; therefore, communications or SCSI devices, etc., may be utilized. The slots allow you to use two Type I or Type II cards (or one Type I and one Type II), or one Type III card.

● Type I or II

Two cards can be used simultaneously.



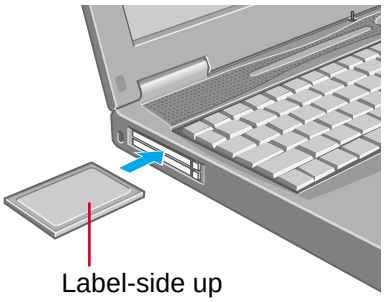
● Type III

One card can be used only in the slot 1.

CAUTION

- Check the PC Cards' specifications. Be sure the total operating current does not exceed the specified limit. Damage may result otherwise.
  Allowable Current (total for two slots) : 3.3 V: 400 mA, 5 V: 400 mA
- There are times when both a Type I card and a Type II card will not work at the same time.
- ZV card, SRAM card, FLASH ROM card (except for an ATA interface) and card requiring 12V are not supported.
- With the repeated insertion/removal of a PC Card, the computer may no longer recognize the PC Card (depending on the type of card).
  In such cases, restart the computer.
- When inserting one more CardBus type card with one already inserted, after entering the standby or hibernation mode, the computer may not function properly.
- If the computer freezes after resuming from the standby or hibernation mode, try removing and then reinserting the PC Card. If this does not correct the problem, reboot the computer.

Installing/Removing the PC Card



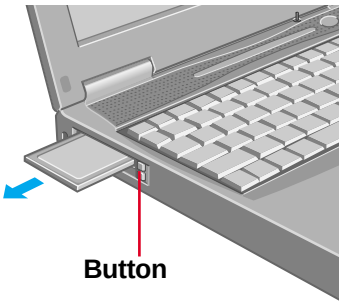
● Installing a PC Card

Slide the PC Card in until it snaps into place. Refer to the operation manual of each card on how to install the card (insertion is typically label-side up).

CAUTION

- In the case of a PC Card to connect a peripheral device (SCSI, IEEE 1394, etc.), first connect the peripheral device to the card, and then insert the card after switching ON the device.
- When inserting a card, do not force the card in if difficulty is encountered. You may damage the slot, making it impossible to remove the card.

(To next page)



● Removing a PC Card

CAUTION

- Do not remove a PC Card while your computer is in the standby or hibernation mode.
- When two PC Cards are inserted, perform the following procedure (from Step ① to Step ③) for each of the two cards.

① Windows 2000

Double-click on the taskbar, select the PC Card, then select [Stop]. Follow the on-screen instructions.
(When the PC Card has been removed after the computer is turned off, this step is not necessary.)

Windows XP

Double-click on the taskbar, select the PC Card, then select [Stop]. Follow the on-screen instructions.
(When the PC Card has been removed after the computer is turned off, this step is not necessary.)

② Press the button out, then press the button again.

③ Slide the PC Card out.

RAM Module

Use a RAM module meeting the RAM module specifications below. If a module is used that does not meet the specifications, there are cases in which data may become unusable or the computer may not operate properly.

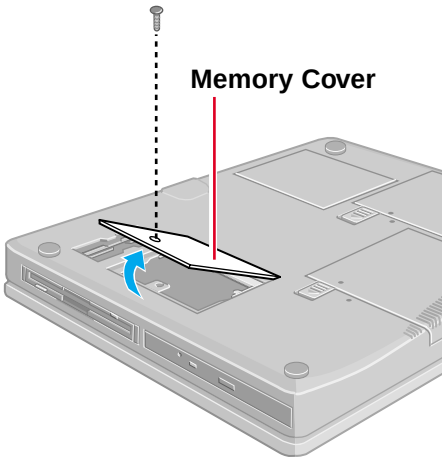
RAM module specifications
200 pins, SO-DIMM, DDR-SDRAM, PC2100 Compliant

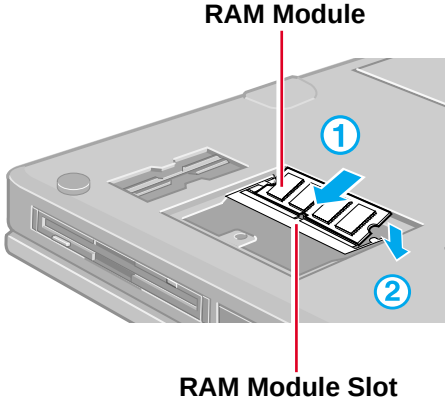
Only a RAM module designed for PC2100 can be added.

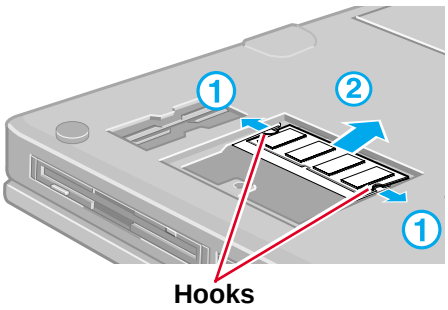
CAUTION

RAM modules are extremely sensitive to static electricity. There are cases where static electricity generated by the human body has adversely affected such modules. In addition, it is easy to damage the RAM modules or internal components of the computer. Therefore, when installing or removing a RAM module, handle the module with extreme care.

Installing/Removing the RAM Module







1 Power off your computer (☞ "Starting Up/Shutting Down")

Do not shut down using the standby or hibernation function.
Disconnect the AC adaptor and remove the battery pack.

2 Remove the memory cover after removing the screw holding it in place

Turn the computer over and use a screwdriver to remove the screw.

CAUTION

Do not touch the terminals or internal components, insert objects other than the module, or allow foreign particles to enter. Doing so has been known to cause damage, fire or electric shock.

3 ● Installing the RAM module

① Slide in the module at an angle.

② Snap the module into place by pushing down on it.

● Removing the RAM module

① Open the left and right hooks.

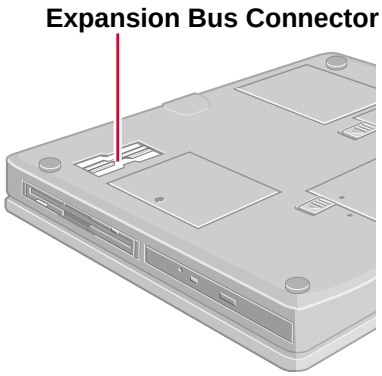
② Gently remove the RAM module from the slot.

4 Put the cover back into place

NOTE

Whether the RAM module is properly recognized or not can be confirmed in [Main] of the Setup Utility. If the RAM module is not recognized, power off the computer and reinstall it.

Port Replicator



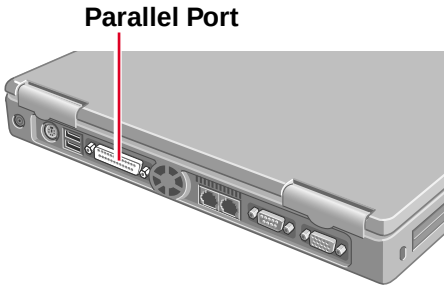
A port replicator is available as an option (CF-VEB481). This device eliminates the hassles of having you connect/disconnect the various cables when carrying your computer around and allows a variety of peripherals to be connected including a headphone or microphone, etc.

The port replicator connects to the expansion bus connector on the bottom of your computer.
For more detailed information, refer to the operation manual of the port replicator.

NOTE

When connecting the external display to the display port on the port replicator, the characters on the external display may be blurred if 1280 x 1024 (or a higher resolution) is set.
In this case, select a resolution that is lower than 1280 x 1024.

Printer



1 Power off your computer (☞ “Starting Up/Shutting Down”)

Do not shut down using the standby or hibernation function.

2 Connect the printer to your computer

3 Turn on the printer, then turn on your computer

4 Setting your printer

Windows 2000

Select [Start] - [Settings] - [Printers].
Find your printer’s icon, click on it, then select [File] - [Set as Default Printer]. If no icon is available, select the [Add Printer] icon and follow the on-screen instructions.

Windows XP

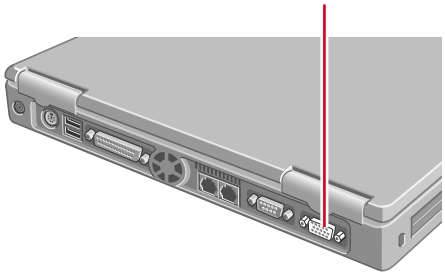
Select [start] - [Printers and Faxes].
Find your printer’s icon, click on it, then select [File] - [Set as Default Printer]. If no icon is available, select [File] - [Add Printer] and follow the on-screen instructions.

NOTE

- You may need to install a driver for your printer. Follow the on-screen instructions and refer to the operation manual of the printer on how to install the driver.
- Confirm whether or not the setting for the [Parallel Port] in the Setup Utility is optimal. (☞ page 41)

External Display

External Display Port



1 **Power off your computer** (☞ "Starting Up/Shutting Down")

Do not shut down using the standby or hibernation function.

2 **Connect the external display to your computer**

NOTE

For more detailed information, refer to the operation manual of the external display.

3 **Turn on the external display, then turn on your computer**

NOTE

When an external display is connected, the computer displays on both the internal LCD and the external display after Windows starts up regardless of the [Display] setting in the Setup Utility.

It is possible to change the setting to display only on the external display or only on the internal LCD with the Fn + F3 keys.

4 **Select your external display**

Windows 2000

Set your external display for [Monitor] in [Start] - [Settings] - [Control Panel] - [Display] - [Settings] - [Advanced].
When a monitor that does not conform to the Plug & Play standards is connected, select [Monitor] - [Properties] - [Driver] - [Update Driver] and make the monitor settings.

Windows XP

Set your external display for [Monitor] in [start] - [Control Panel] - [Appearance and Themes] - [Display] - [Settings] - [Advanced].
When a monitor that does not conform to the Plug & Play standards is connected, select [Monitor] - [Properties] - [Driver] - [Update Driver] and make the monitor settings.

NOTE

- For more detailed information, refer to the operation manual of the external display.
- The characters on the external display may be blurred if the resolution of the external display is set to 2048 x 1536. In this case, select a resolution that is lower than 2048 x 1536.

DualView Windows XP

With DualView, you can use both the internal LCD and the external display as an extended display domain. You can also drag a window from the internal LCD to the external display. To use the DualView;

1. Select [Settings] in [Control Panel] - [Appearance and Themes] - [Display].
2. Select display [2] and add a check mark for [Extend my Windows desktop onto this monitor], then select [Apply].
3. Make the settings for each display (screen area, colors, etc.).

(To next page)

NOTE

- The screen area will not be properly displayed when setting the resolution of the external display to more than 1600 x 1200.
- If you charge the resolution and/or color setting, be sure to restart the computer.
- There are some applications that cannot be used in the DualView.
- When the button to maximize a window is pressed, one of the displays will show the maximized display.
- A window that has been maximized cannot be moved to the other display.
- When the DualView is being utilized, the pop-up icon window is displayed only on the display [1].

CAUTION

- When the application running is not shown on the display, refer to the following items.
  (Under the condition the application is in the external display (external display [2]), or after the application is closed in the external display, there are cases the application will not be shown in the display when executed the next time if the position of the Extension Display is changed or the DualView is closed.)

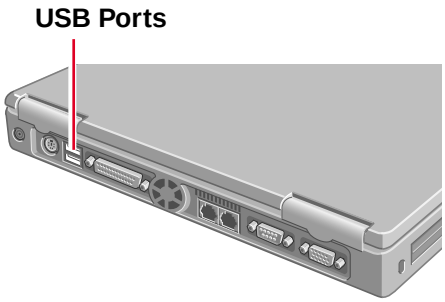
  When there is no display after the position of the Extension Display is changed:
  The application running is being displayed at the position of the Extension Display before the change. Return the position of the Extension Display to the condition before the change once, move the application to the internal LCD (internal LCD [1]), and then correct the position of the Extension Display.

  When there is no display when the DualView is disabled:
  The application running is being displayed in the external display (external display [2]). Set the DualView again, move the application from the external display (external display [2]) to the internal LCD (internal LCD [1]) and then disable the DualView.

- When the DualView is used, set [Never] for [Plugged in] and [Running on batteries] for [Turn off monitor] in [Control Panel] - [Performance and Maintenance] - [Power Options] - [Power Schemes].
  If this setting is not made, there are cases the display will not be shown properly.
- To prevent images from being burned onto the external display, manually shut off the power to the external display when the display does not have to be used.
- When the display domain for the DualView is changed, there are cases the wallpaper and icons become displaced.
  Wallpaper: Change the setting for the wallpaper.
  Icons: Run the command to automatically realign the icons. (Auto Arrange)
- When an animated pointer is used for the mouse pointer (e.g., when changing the theme in [Appearance and Themes] of the [Control Panel]), an error may occur when resuming from the standby or hibernation mode. In such cases, change the mouse pointer to the standard pointer with the following procedure.
  1 In [Control Panel], select [Printers and Other Hardware] - [Mouse], then select [Pointers].
  2 Select [Windows Default (System Scheme)] in [Scheme], then select [OK].
- When an external display not compatible with VESA DPMS is used, there are cases the display of the external display will be adversely affected when the LCD panel is closed. In such cases, turn the power of the external display OFF.

USB Devices

Installing USB devices



1 **Power off your computer** (☞ 📖 "Starting Up/Shutting Down")

Do not shut down using the standby or hibernation function.

2 **Connect the USB device to your computer**

NOTE

- For more detailed information, refer to the operation manual of the USB device.
  You may need to install drivers compatible with the OS you are using for your USB devices. Follow the on-screen instructions and refer to the operation manual for USB devices on how to install the driver.
- When a USB device is connected, there are cases the standby or hibernation function will not operate in a normal manner due to the USB device. In addition, a USB device may have to be removed temporarily and the computer restarted in cases where the computer is unable to start up properly.

Removing USB devices

CAUTION

Do not remove a USB device while your computer is in the standby or hibernation mode.

1 Windows 2000

Double-click on the taskbar and select the USB device, then select [Stop]

Follow the on-screen instructions.

(When is not displayed or when the USB device has been removed after the computer is turned off, this step is not necessary.)

Windows XP

Double-click on the taskbar and select the USB device, then select [Stop]

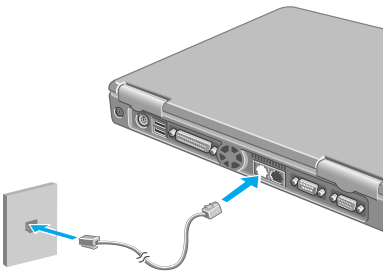
Follow the on-screen instructions.

(When is not displayed or when the USB device has been removed after the computer is turned off, this step is not necessary.)

2 **Remove the USB device**

Connecting to a Telephone Line and Settings

When using the internal modem, set [Modem] to [Enable]* in the Setup Utility.
(* Default)



1 Connecting a telephone line to the modem

It is not possible to connect the modem to any of the following lines.

- Internal home phones
- Intercoms

CAUTION

Do not use the PBX internal phone lines installed in company offices. Doing so may lead to a fire or electric shock.

NOTE

There are cases telephone construction (or installation) work will be necessary depending on the shape of the connector of the telephone line.

2

Windows 2000

Select [Edit] in [Start] - [Settings] - [Control Panel] - [Phone and Modem Options] - [Dialing Rules].
Input the necessary information (items such as the country, area code, etc.), select [OK], then select [OK].

Windows XP

Select [Edit] in [start] - [Control Panel] - [Printers and Other Hardware] - [Phone and Modem Options] - [Dialing Rules].
Input the necessary information (items such as the country, area code, etc.), select [OK], then select [OK].

NOTE

Do not enter either the standby or hibernation mode during communications.

(To next page)

Ring Resume Function

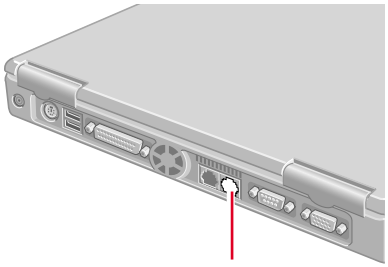
With this function, if the telephone that is connected to the modem rings in the standby mode, the power of the computer automatically switches ON.
This function is convenient when using automatic information receiving applications such as a FAX application.
When using this function, it is necessary to run a software application able to maintain the condition to receive telephone calls and to return the computer to the original condition after a call.

NOTE

- This function does not work when the computer is off or is in hibernation mode.
- When using this function, it is recommended that the AC adaptor be connected to the computer.
- The computer cannot resume if a telephone is connected to the line of a modem (e.g., a PC Card modem) other than the internal modem.
- Concerning the setting for [System standby]*, roughly consider the communication time and then set [System standby].
  There may be cases where the computer enters the standby mode after the time set for [System standby] elapses even during communications, and cuts off the communications. If [Never] is set, the computer will not enter the standby mode during communications, but once the computer resumes, the power of the computer will remain on while the user is absent.
  * Windows 2000 : In [Control Panel] - [Power Options] - [Power Schemes]
    Windows XP : In [Control Panel] - [Performance and Maintenance] - [Power Options] - [Power Schemes]
- When the Ring Resume function is being used, some time elapses before a connection is established (equal to the time for the computer to resume). To allow the computer to resume, set the “call” to a larger value than a typical telephone call.
  If it is not possible for the sending side to set a long “call”, set the “number of rings until answer” (with the software application that is able to maintain the condition to receive telephone calls) to a small value.

Using LAN

When using the LAN, set [LAN] to [Enable]* in the Setup Utility. (* Default)



Using the computer as a network computer

When using the computer as a network computer, some additional settings may have to be made depending on the usage conditions. We recommend asking your system administrator or the person in charge of the network.

NOTE

- Do not use the standby or hibernation functions during communications (except when the Wake Up from LAN function is in use), as this may cause an error in data transmission or reception. The Timeout function may engage even during data transmissions, causing the computer to automatically go into standby or hibernation mode. When not using the Wake Up from LAN function, we recommend disabling the Timeout function using the following menu.
  Windows 2000 : [Control Panel] - [Power Options] - [Power Schemes]
  Windows XP : [Control Panel] - [Performance and Maintenance] - [Power Options] - [Power Schemes]
- If you are unable to connect to the network (when the indicator of your HUB unit does not light):
  1 Windows 2000
  Select [Device Manager] in [Start] - [Settings] - [Control Panel] - [System] - [Hardware].
  Windows XP
  Select [Device Manager] in [start] - [Control Panel] - [Performance and Maintenance] - [System] - [Hardware].
  2 Select [Realtek RTL8139/810x Family Fast Ethernet NIC] from [Network adapters].
  3 Select [Action] - [Properties].
  4 Select [Advanced].
  5 Confirm the settings of each item.

Wake up from LAN

This is a function to automatically power the computer on from a network server when the computer is in the standby or hibernation mode. To use this function, it is necessary to have a network environment that accommodates Wake up from LAN.
To use this function:

1. Windows 2000
   Select [Device Manager] in [Start] - [Settings] - [Control Panel] - [System] - [Hardware].
   Windows XP
   Select [Device Manager] in [start] - [Control Panel] - [Performance and Maintenance] - [System] - [Hardware].
2. Select [Realtek RTL8139/810X Family Fast Ethernet NIC] from [Network adapters].
3. Select [Action] - [Properties].
4. Select [Power Management], add the check mark for [Allow this device to bring the computer out of standby.] and [Allow the computer to turn off this device to save power.], then select [OK].

NOTE

- Be sure to connect the AC adaptor, and enable the supply of power.
- Make settings to allow the use of a Local Area Network.
- The computer will not “wake up” if the LAN cable is disconnected and reconnected.
- When using the Wake up from LAN function, delete the check mark for the following:
  Windows 2000
  [Prompt for password when computer goes off standby] in [Start] - [Settings] - [Control Panel] - [Power Options] - [Advanced]
  Windows XP
  [Prompt for password when computer resumes from standby] in [start] - [Control Panel] - [Performance and Maintenance] - [Power Options] - [Advanced]
- The Wake up from LAN function will not operate when the computer has been shut down.
- This works irrespective of the [Wake up from LAN] setting of the Setup Utility.

Hard Disk Drive

To change your hard disk drive, contact Panasonic Technical Support

CAUTION

To customers:

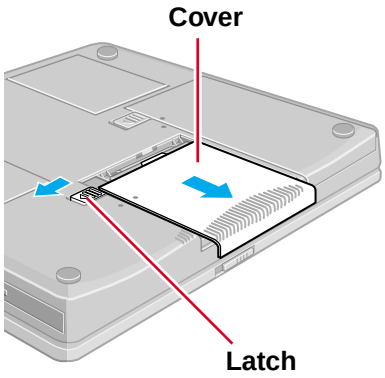
- To change your hard disk, contact Panasonic Technical Support.
- Be sure to back up all important data before the change.
- If [Hard Disk Lock] is set to [Enable] in the Setup Utility, change this to [Disable] before the change.

To technicians (at Panasonic Technical Support):

Be careful when replacing the hard disk. The hard disk is extremely sensitive to shock. In addition, static electricity could later affect some internal components.

Installing/Resuming the hard disk

(For technicians at Panasonic Technical Support)

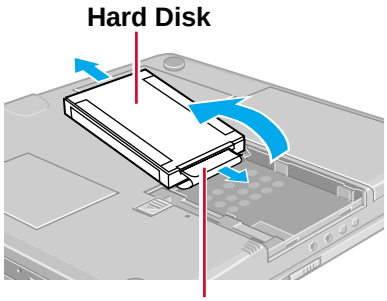


1 Power off your computer (☞ 📖 "Starting Up/Shutting Down")

Do not shut down using the standby or hibernation function.
Disconnect the AC adaptor and remove the battery pack.

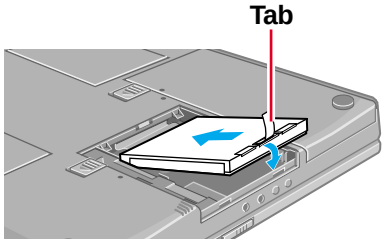
2 Turn your computer over and remove the cover

Slide the latch, and then without releasing it, slide and remove the cover.



3 Removing the hard disk

Carefully lift the hard disk and remove it from the connector by pulling the tab.

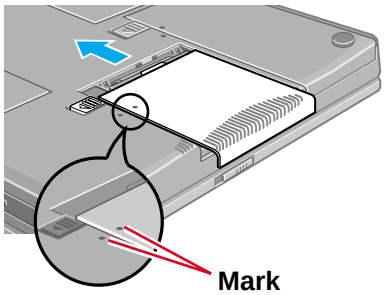


4 Inserting the hard disk

Connect the hard disk to the connector and carefully insert the hard disk.

CAUTION

The hard disk may be damaged if its top and bottom are confused.



5 Close the cover

Match the mark on the cover to the body of the computer and slide the cover back into place.

CAUTION

Be sure the tab does not get caught when closing the cover.

Running the Setup Utility

1 **Turn on or restart the computer**

2 **Press F2 while [Press <F2> to enter SETUP] is displayed soon after the computer begins the startup procedure**

(If you fail to press F2 at this time, restart your computer.)

- **If [Enter Password] is displayed**
  Enter your password.
  (The Supervisor Password must be entered to change items of the [Advanced] menu. Entering the User Password will not allow you to make changes to any of the items.)

NOTE

- For more details, on-line help is available; press F1.
- To close the Setup Utility, see page 43.

Key Operations

F1	:To display the corresponding “help” file.
Enter	:To display sub-menu.
Esc	:To display [Exit] menu.
← →	:To move among the menus.
↑ ↓	:To move among the items.
F5 F6	:To move among the values.
F9	:To set default settings. (When starting up the Setup Utility with the User Password, this key is not available.)
F10	:To save the settings and exit.

Main Menu

Model No:	xxxx
Serial No:	xxxx
CPU Type:	xxxx
CPU Speed	x.x GHz
BIOS Version:	Vx.xxLxx
System Memory:	xxx MB
Primary Master:	xx GB
Secondary Master:	CD Drive
Language	[English]
System Date:	[xx/xx/xxxx]
System Time:	[xx:xx:xx]
Touch Pad:	[Enable]
Speaker:	[Enable]
Display:	[Simultaneous]
Display Expansion:	[Enable]

Parameters

(__ : Default)

Language*1	English Japanese
Touch Pad	Disable Enable
Speaker	Disable Enable
Display*2	External Monitor Internal LCD Simultaneous
Display Expansion	Disable Enable

*1 Select the language to be used when displaying the Setup Utility.

*2 When an external display is connected, the computer displays on both the internal LCD and the external display after Windows starts up regardless of the [Display] setting.

Advanced Menu

Serial Port :	[Auto]
Parallel Port:	[Auto]
Mode:	[ECP]
Modem :	[Enable]
LAN:	[Enable]
Boot up from LAN:	[Enable]
Wake up from LAN:	[Disable]

(Display may differ depending on computer model.)

Parameters

(__ : Default)

Serial Port	Disable Enable Auto
I/O IRQ*1	3F8/IRQ4 2F8/IRQ3 3E8/IRQ4 2E8/IRQ3
Parallel Port	Disable Enable Auto
Mode*2	Uni-directional Bi-directional EPP ECP
I/O IRQ*1	378/IRQ7 278/IRQ5
Modem	Disable Enable
LAN	Disable Enable
Boot up from LAN*3	Disable Enable
Wake up from LAN*3	Disable Enable

*1 This item is displayed only when the setting of each port is [Enable].
*2 This item is displayed only when [Parallel Port] is set to [Enable] or [Auto].
*3 ● [Disable] is automatically set when [LAN] is set to [Disable].
● Wake up function works on Windows 2000 or Windows XP irrespective of the [Wake up from LAN] setting.

Security Menu

Password on boot	[Enable]
Display Boot Menu:	[Enable]
▸Set Supervisor Password:	[Enter]
Hard Disk Lock:	[Disable]
User Password Protection:	[No Protection]
▸Set User Password:	[Enter]
Floppy Operation:	[Enable]

NOTE

When starting up the Setup Utility with the User Password;
The User Password can be changed only when the [User Password Protection] has been set to [No Protection]. The User Password cannot be deleted.

Parameters

(__ : Default)

Password on boot	Disable Enable
Display Boot Menu	Disable Enable
Set Supervisor Password	To the sub-menu
Hard Disk Lock*	Disable Enable
User Password Protection	No Protection Protected
Set User Password*	To the sub-menu
Floppy Operation	Disable Enable

* Setting impossible when the Supervisor Password is not set.

Power Menu

Fn+F7/Fn+F10 Key:	[Enable]
CD Drive Speed:	[High]
Environment:	[Normal Temperature]

Parameters

(__ : Default)

Fn+F7/Fn+F10 Key	Disable Enable
CD Drive Speed*	High Low
Environment	Normal Temperature High Temperature

* “CD Drive” indicates a drive such as a CD-ROM drive, DVD-ROM drive, CD-R/RW drive or DVD-ROM & CD-R/RW drive. For a CD-R/RW drive, the description for “CD Drive Speed” applies to read only.

Boot Menu

Floppy Drive
Hard Disk
CD Drive
LAN

The default order is as follows:
[Floppy Drive] ➡ [Hard Disk] ➡ [CD Drive] ➡ [LAN].
To move a device up by one in the order, select the device with ↑ and ↓, and then press F6.
To move a device down by one in the order, select the device with ↑ and ↓, and then press F5.

NOTE

Boot First Menu

The device for starting up the Operating System can also be selected during computer start-up.
After the computer is turned on, the device selection display will appear when ESC is pressed while “Press <ESC> to enter Boot First Menu” is shown.
When the setting of the [Boot] menu is changed, the selection screen display will also change.
The Boot First Menu is displayed only when [Display Boot Menu] in Security Menu is set to [Enable].

Exit Menu

Save Values & Exit
Exit Without Saving Changes
Get Default Values
Load Previous Values
Save Current Values

Refresh Battery

Parameters

Save Values & Exit	Exit the Setup Utility and save your changes to CMOS.
Exit Without Saving Changes	Exit the Setup Utility without saving your changes to CMOS.
Get Default Values*	Set the default settings.
Load Previous Values	Load previous values from CMOS for all Setup items.
Save Current Values	Save your changes to CMOS.
Refresh Battery	Refreshing the Battery (☞ page 20)

* This item may not be displayed when starting up the Setup Utility with the User Password.

Network

- When the power saving function is running, communications software may malfunction. For example, communications may be halted if the standby (hibernation) mode is activated. The computer must be restarted if one of these modes is entered during data communications.
  Be sure that the power of the display is cut (for energy conservation purposes) or the computer enters standby (hibernation) mode after the communications software is closed.
- The network connection may be severed under the condition the power of the display is off (for energy conservation purposes) and standby (hibernation) mode.
  Windows 2000
  When network or communication software is to be used, set [System standby] and [System hibernates], [Turn off monitor] and [Turn off hard disks] (in [Start] - [Settings] - [Control Panel] - [Power Options]) to [Never].
  Windows XP
  When network or communication software is to be used, set [System standby] and [System hibernates], [Turn off monitor] and [Turn off hard disks] (in [start] - [Control Panel] - [Performance and Maintenance] - [Power Options]) to [Never].

Windows Security Function

Windows has a security function that differs from the security function of the Setup Utility. For detailed information, refer to the Windows help.

NOTE

- Set the password for secrecy and protection.
- Only an account for the Administrator is created the first time the computer is started. Create accounts for person or persons who are actually going to use a computer.
- We recommend using an NTFS file system in order to use the Windows security function.

Precautions When Using a CardBus Type LAN Card Windows 2000

Prior to usage, optimize the LAN card settings by following the procedure given below. Failure to do so may result in an error message being displayed when performing a copy operation via the LAN card with a computer on the network.

1 Double-click the Network Card you are using from [Network adapters] in [Control Panel] - [System] - [Hardware] - [Device Manager]

2 Select [Advanced], select [Store And Forward] from [Property], then set [Enabled] for [Value] if it is set to [Disabled]
(This item may be unavailable for some types of network cards.)

DMI Viewer

This computer conforms to the specifications of the Desktop Management Interface (DMI). The DMI Viewer can be used when you want to know information on the internal systems this computer supports, starting with the CPU and memory.

Running DMI Viewer

Windows 2000

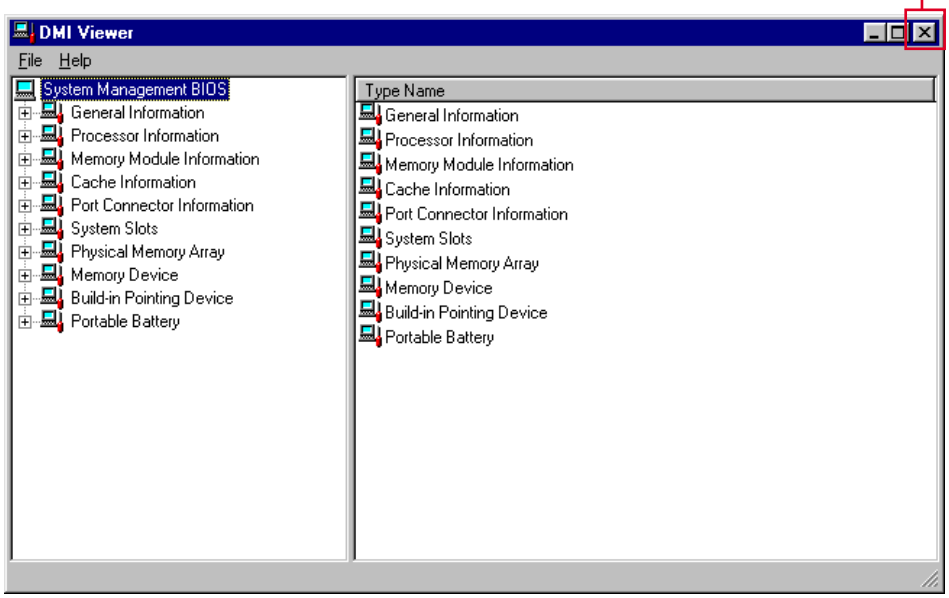
Select [DMI Viewer] from [Start] - [Programs] - [Panasonic]

Windows XP

Select [DMI Viewer] from [start] - [All Programs] - [Panasonic]

The screen shown below is displayed.
When you click on an item, detailed information on that item will be displayed.

Click to close the DMI Viewer



Saving information to a file

Displayed information can be saved to a text file (.txt). Run the DMI Viewer and display the information you wish to save.

1 ● **To save the item that is displayed**
Select [Save Selected Data] from [File] menu.
● **To save all items**
Select [Save All Data] from [File] menu.

2 **Input the file name (and select the folder) and select [Save]**

List of Error Codes

The following is a list of the messages that BIOS can display. Most of them occur during POST. Some of them display information about a hardware device, e.g., the amount of memory installed. Others may indicate a problem with a device, such as the way it has been configured. Following the list are explanations of the messages and remedies for reported problems.
If your system displays one of except the messages marked below with an asterisk (*), write down the message and contact Panasonic Technical Support. If your system fails after you make changes in the Setup menus, reset the computer, enter Setup and install Setup defaults or correct the error.

0200 Failure Fixed Disk
Fixed disk in not working or not configured properly. Check to see if fixed disk is attached properly. Run Setup. Find out if the fixed-disk type is correctly identified.

0210 Stuck key
Stuck key on keyboard.

0211 Keyboard error
Keyboard not working.

0212 Keyboard Controller Failed
Keyboard controller failed test. May require replacing keyboard controller.

0213 Keyboard locked - Unlock key switch
Unlock the system to proceed.

0230 System RAM Failed at offset : *nnnn*
System RAM failed at offset *nnnn* of in the 64k block at which the error was detected.

0231 Shadow RAM Failed at offset : *nnnn*
Shadow RAM failed at offset *nnnn* of the 64k block at which the error was detected.

0232 Extended RAM Failed at offset : *nnnn*
Extended memory not working or not configured properly at offset *nnnn*.

0250 System battery is dead - Replace and run SETUP
The CMOS clock battery indicator shows the battery is dead. Replace the battery and run Setup to reconfigure the system.

***0251 System CMOS checksum bad - Default configuration used**
System CMOS has been corrupted or modified incorrectly, perhaps by an application program that changes data stored in CMOS. The BIOS installed Default SETUP Values. If you do not want these values, enter Setup and enter your own values. If the error persists, check the system battery or contact Panasonic Technical Support.

0260 System timer error
The timer test failed. Requires repair of system board.

0270 Real time clock error
Real-time clock fails BIOS test. May require board repair.

***0280 Previous boot incomplete - Default configuration used**
Previous POST did not complete successfully. POST loads default values and offers to run Setup. If the failure was caused by incorrect values and they are not corrected, the next boot will likely fail. On systems with control of **wait states**, improper Setup settings can also terminate POST and cause this error on the next boot. Run Setup and verify that the wait-state configuration is correct. This error is cleared the next time the system is booted.

0281 Memory Size found by POST differed from EISA CMOS
Memory size found by POST differed from EISA CMOS.

02B0 Diskette drive A error

02B1 Diskette drive B error
Drive A: or B: is present but fails the BIOS POST diskette tests. Check to see that the drive is defined with the proper diskette type in Setup and that the diskette drive is attached correctly.

02B2 Incorrect Drive A type - run SETUP
Type of floppy drive A: not correctly identified in Setup.

02B3 Incorrect Drive B type - run SETUP
Type of floppy drive B: not correctly identified in Setup.

02D0 System cache error - Cache disabled
Contact Panasonic Technical Support.

02F0: CPU ID:
CPU socket number for Multi-Processor error.

02F4: EISA CMOS not writable
ServerBIOS2 test error: Cannot write to EISA CMOS.

02F5: DMA Test Failed
ServerBIOS2 test error: Cannot write to extended DMA (Direct Memory Access) registers.

02F6: Software NMI Failed
ServerBIOS2 test error: Cannot generate software NMI (Non-Maskable Interrupt).

02F7: Fail - Safe Timer NMI Failed
ServerBIOS2 test error: Fail-Safe Timer takes too long.

***device* address Conflict**
Address conflict for specified *device*.

Allocation Error for: *device*
Run ISA or EISA Configuration Utility to resolve resource conflict for the specified *device*.

Failing Bits : *nnnn*
The hex number *nnnn* is a map of the bits at the RAM address which failed the memory test. Each 1 (one) in the map indicates a failed bit. See error 230,231 or 232 for offset address of the failure in System, Extended or Shadow memory.

Invalid System Configuration Data
Problem with NVRAM (CMOS) data.

I/O device IRQ conflict
I/O device IRQ conflict error.

Operating System not found
Operating system cannot be located on either drive A: or drive C:. Enter Setup and see if fixed disk and drive A: are properly identified.

Parity Check 1 *nnnn*
Parity error found in the system bus. BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays ????. Parity is a method for checking errors in binary data. A parity error indicates that some data has been corrupted.

Parity Check 2 *nnnn*
Parity error found in the I/O bus. BIOS attempts to locate the address and display it on the screen. If it cannot locate the address, it displays ????.

Press <F1> to resume, <F2> to Setup
Displayed after any recoverable error message. Press <F1> to start the boot process or <F2> to enter a Setup and change the settings. Write down and follow the information shown on the screen.

Dealing with Problems (Advanced)

When a problem occurs, refer to this page. If you still cannot troubleshoot the problem, contact Panasonic Technical Support.

● Starting Up

The power indicator or battery indicator is not lit	● Check the cable connection for the AC adaptor. ● Check to see if a fully charged battery is properly installed. ● Remove the battery pack and disconnect the AC adaptor, then connect them again.
** is displayed**	Input your password. If you have forgotten it, contact Panasonic Technical Support.
POST Startup Error(s) is displayed	☞ page 46
Windows startup, or an operation is extremely slow	Press F9 in the Setup Utility (☞ page 39). This will restore the Setup Utility's settings to their default values (except the password settings). Then, the Setup Utility must be run once again for you to input the appropriate operating environment settings. (The processing speed depends on the application software used, so this operation may not cause the processing speed to increase.)
The date and time are incorrect	● You can set the date and time using the following menu. Windows 2000 : [Control Panel] - [Date/Time] Windows XP : [Control Panel] - [Date, Time, Language, and Regional Options] - [Date and Time] ● When the computer is connected to a LAN, confirm the date and time of the server. ● If you continue to experience problems, the internal battery maintaining the clock may need to be replaced. Contact Panasonic Technical Support. ● This computer will not correctly recognize the date and time starting from the year 2100 A.D.
When the previous item is not the cause	● Press F9 in the Setup Utility (☞ page 39). This will restore the Setup Utility's settings to their default values (except the password settings). ● Try removing all peripheral devices. ● Windows 2000 Click [Local Disk(C:)] in [My Computer] with the right button, select [Properties], then select [Tools] - [Check Now]. Windows XP Click [Local Disk(C:)] in [start] - [My Computer] with the right button, select [Properties], then select [Tools] - [Check Now]. ● At start-up, press F8 to operate the computer in the Safe mode.
When resuming from the standby or hibernation mode, does not appear even if a password has been set in the Setup Utility	Use the Windows password as follows: Windows 2000 Set the password in [Control Panel] - [Users and Passwords], then add the check mark for [Prompt for password when computer goes off standby] in [Control Panel] - [Power Options] - [Advanced]. Windows XP Select the account to change in [Control Panel] - [User Accounts] and set the password, then add the check mark for [Prompt for password when computer resumes from standby] in [Control Panel] - [Performance and Maintenance] - [Power Options] - [Advanced].
Windows 2000 **The password of the administrator was forgotten**	After reinstalling, setup Windows, then set the password again.

Shutting Down

Windows cannot be shut down or restarted	● Do not shut down Windows during music playback. ● If a USB device is connected, try removing it. ● Was an attempt made to shut down (or restart) Windows while the computer was connected to a network drive using a LAN? With the following procedure, shut down (or restart) Windows after disconnecting the network drive. *1* Windows 2000 Select [My Computer] on the Desktop with the right button of the touch pad. Windows XP Select [start] - [My Computer] with the right button of the touch pad. *2* Select [Disconnect Network Drive]. *3* Select all of the displayed network drives, then select [OK].

Battery Indicator

The red indicator lights. Repeated beeping sound while the computer is in use.	The battery level is low. Save your data and power off your computer. After connecting the AC adaptor or replacing the battery pack with a fully charged one, turn your computer on.
The red indicator blinks	● The battery pack or recharging function may be defective. Quickly remove the battery pack and disconnect the AC adaptor, then connect them again. ● If the problem persists, contact Panasonic Technical Support.
The orange indicator blinks	Unable to charge because of an improper temperature range. (☞ 📖 "Read Me First - Precautions(Battery Pack)")

Touch Pad

Unable to input using the touch pad	● Has the Setup Utility been used to set [Touch Pad] to [Enable]? (☞ page 40) ● When mouse drivers are installed (e.g., Intellimouse), the touch pad is unable to be used. ● Has the touchpad driver been properly installed?

Character Input

Only capital letters are being input	If **CapsLock** is on, the Caps Lock function is ON. To switch it OFF, press Caps Lock .
How to input European characters (ß, à, ç), symbols or Euro Currency Symbol is unclear	Windows 2000 Select [Start] - [Programs] - [Accessories] - [System Tools] - [Character Map]. Windows XP Select [Start] - [All Programs] - [Accessories] - [System Tools] - [Character Map]. The Character Map will be displayed. Point to the desired font name and select it.

Setup Utility

[Enter Password] is displayed	Enter the User Password or Supervisor Password. If you have forgotten it, contact Panasonic Technical Support.
[Advanced] menu can not be registered	Restart the Setup Utility with the Supervisor Password.
All or some items in [Security] menu can not be registered	Restart the Setup Utility with the Supervisor Password.
F9 does not work	Restart the Setup Utility with the Supervisor Password.

Network

Unable to connect to a network	● When using the computer as a network computer, some additional settings may have to be made depending on the usage conditions. We recommend asking your system administrator or the person in charge of the network. ● If the standby or hibernation mode is entered, the computer may have to be restarted.
Windows 2000 **When performing a copy operation via a LAN card with a computer on the network, an error message is displayed and the copy operation fails**	● The settings for the LAN card you are using may not be optimized. Confirm this with the following procedure. *1* Double-click the Network Card you are using from [Network adapters] in [Control Panel] - [System] - [Hardware] - [Device Manager]. *2* Select [Advanced], select [Store And Forward] from [Property], then set [Enabled] for [Value] if it is set to [Disabled]. (This item may be unavailable for some types of network cards.) ● Confirm that the computer on the network is operating properly and that the file is not corrupt.

Sound

The sound is not heard	● Try changing the mute by pressing Fn + F4 or Fn + F6 . ● Has the Setup Utility been used to set [Speaker] to [Enable]?(☞ page 40)

Key Combinations

[Fn] key combinations do not work	When switching to a different user with the Fast User Switching function, these key operations may not work. If this is the case, log off, then log on again and try the operation once more.

Display

No display after powering on	● When there is no display to an external display, • Check your cable connection to the external display. • Confirm your display is powered on. • Check the settings for your external display. ● Try changing the display by pressing Fn + F3 . ● When displaying only through an external display, if the computer is shut down by using the standby or hibernation function, there will be no display on the LCD unless the external display is connected when operations are resumed. In this case, connect the external display or press Fn + F3 .
The power has not been turned off, but after a certain period of time, there is no display	● Has the computer been set to the power-saving mode? To resume operation of your computer from the condition the power of the display is off (for energy conservation purposes), press any key unrelated to the direct triggering of a selection, like Shift . ● To save power, your computer may have automatically entered the standby or hibernation mode. Press the power switch.
The cursor cannot be controlled	Restart the computer by using the keyboard (e.g., ⊞).
An afterimage appears (e.g., green, red, and blue dots remain on the display) or there are dots not displaying the correct colors.	● If an image is displayed for a prolonged period of time, an afterimage may appear. This is not a malfunction. The afterimage will disappear when a different screen is displayed. ● High-precision and advanced technologies are necessary in the production of color liquid crystal displays (color LCDs). Therefore, if 0.002% or less of the picture elements either fail to light or remain constantly lit (that is, more than 99.998% of elements are functioning properly), no defect is considered to exist.
The external display no longer displays properly	When an external display not compatible with the power saving mode is used with the computer, the external display may no longer display properly when the computer enters the condition the power of the display is off (for energy conservation purposes). In such cases, turn off the power to the external display.
The screen becomes disordered	Changing the number of colors of the display may affect the screen. Restart the computer. Windows XP When using DualView, use the same display colors for the external display as those used by the LCD.
After the display destination of the screen is switched with Fn + F3 , the display destination returns to both the internal LCD and external display upon operation	Under the condition that the [Command Prompt] screen is set to “Full Screen”, the display destination returns to both the internal LCD and external display if “EXIT” is input and the [Command Prompt] screen is closed, or “Full Screen” is canceled (e.g., Alt + Enter), when the display destination of the screen is switched with Fn + F3 . Press Fn + F3 again.

Connecting Peripherals

Your peripheral does not work (An error occurs while installing the driver)	You need to use drivers conforming to the current operating system(version). Some earlier drivers will no longer work. To confirm the version; Windows 2000 : Select [Control Panel] - [System]. Windows XP : Select [Control Panel] - [Performance and Maintenance] - [System]. For more information, ask the manufacturer of the driver in question.
Unable to print	● Check the computer-printer connection. ● Make sure the printer is on. ● Make sure the printer is in the online state. ● Make sure paper is in the printer tray and there is no paper jam. ● Has the Setup Utility been used to set [Parallel Port] to [Enable] or [Auto]? ● Depending on the printer, EPP or ECP may not work at times.
The cursor does not move from mouse operations	Check your mouse connection, then reboot the computer from the keyboard. Windows 2000 From the keyboard, you may choose to press down on , then select [Shut Down]. Windows XP From the keyboard, you may choose to press down on , then select [Turn Off Computer].
The device connected to the serial port does not work	● Check the connection. ● Confirm that the device driver for the serial port works. Refer to the reference manual of the device. ● Confirm that two mouse devices are not connected, one through the external keyboard/mouse port and the other through the serial port. ● Try setting [Touch Pad] to [Disable] in the Setup Utility. ● Confirm that [Serial Port] has not been set to [Disable]. ● Depending on the device, the operable I/O and IRQ may be limited. Try different I/O and IRQ settings in the Setup Utility.
External mouse or trackball connected to the external keyboard/mouse port does not work	● Try setting [Touch Pad] to [Disable] in the Setup Utility. ● In some circumstances, if a PS/2 external mouse with a serial interface conversion function is connected to the port, it may not operate normally. Try connecting it to the serial port.
A PC Card does not work	● Make sure the card is properly inserted. ● Confirm that the card conforms to the PC Card Standard. ● Note that after a driver is installed, the computer must be rebooted. ● Check that the proper port settings have been made. ● Read the PC Card's manual. Or, you may need to call the manufacturer of the PC Card. ● Try removing / reinserting the PC Card by following the proper procedure. (page 26) ● Confirm that a driver for your operating system has been installed.
You do not know the available RAM module	page 28
The RAM module has not been recognized	● Make sure the RAM module has been properly inserted. ● Use the RAM module that supports the recommended specifications.
The address map for IRQ, I/O port address, etc. is unclear	Windows 2000 Check the address map by going to [View] - [Resources by type] in [Control Panel] - [System] - [Hardware] - [Device Manager]. Windows XP Check the address map by going to [View] - [Resources by type] in [Control Panel] - [Performance and Maintenance] - [System] - [Hardware] - [Device Manager].
A USB device does not work	● Make sure a driver is installed. ● Contact the manufacturer of the product.

Disk Operations

Cannot read/write to a floppy disk	● Has the floppy disk been correctly inserted? ● Has the floppy disk been correctly formatted? ● Has the Setup Utility been used to set [Floppy Operation] to [Enable]? (☞ page 42) ● Your floppy disk content may be corrupted.
Unable to write to a floppy disk	Is the floppy disk write-protected?
How to format a floppy disk is unclear	Windows 2000 Select [Format] in [My Computer] - [3 1/2 Floppy (A:)] - [File]. After confirming the disk volume and format type, start formatting. Windows XP Select [Format] in [start] - [My Computer] - [3 1/2 Floppy (A:)] - [File]. After confirming the disk volume and format type, start formatting.
Unable to read/write to the hard disk	● Your drive or file may not have been properly set. ● Check to see if the hard disk is full. If it is full, delete unnecessary files. ● Your hard disk content may be corrupted. Contact Panasonic Technical Support.
When the previous item is not the cause	Try testing another drive or media.
Trouble has occurred with the disc	You may need to clean the lens or disc.
The access lamp ( ) does not light	Is the disc loaded on the tray correctly?
Cannot play disc or read data from it	Is the disc bent, scratched, or dirty?
Cannot eject disc	Is the computer powered on? To remove a disc when the computer is powered off, insert a pointed object (e.g., the bent-out tip of a paper clip, or the tip of a pencil or ballpoint pen) into the emergency hole. Pushing it completely to the end will free the tray so that it can be pulled out. **Emergency Hole** (The position of the emergency hole differs depending on the drive.)
A blue background appears on the screen with the MPEG image	Did you open the CD drive or remove the MPEG disc while it was operating? Re-insert the MPEG disc and close the CD drive. Press **Enter** .
The CD drive vibrates a lot	● Is the disc bent labeled? ● Set the [CD Drive Speed] to [Low] in the Setup Utility. (☞ page 42)

Others

Computer hangs	● Press **Ctrl** + **Alt** + **Del** and turn off the computer. ● After shutting down by pressing the power switch for more than four seconds, press the power switch to power on and open the application again. If the program no longer works normally, delete the program using the following menu. Then reinstall the program. Windows 2000 : [Control Panel] - [Add/Remove Programs] Windows XP : [Control Panel] - [Add or Remove Programs] ● Is an external drive (CD-ROM drive, CD-RW drive, etc.) connected? When the drive is installed, do not use an external drive (CD-ROM drive, CD-RW drive, etc.).

Copyright

This manual is copyrighted by Matsushita Electric Industrial Co., Ltd. with all rights reserved. No part of this manual may be reproduced in any form without the prior written permission of Matsushita Electric Industrial Co., Ltd.
No patent liability is assumed with respect to the use of the information contained herein.

© 2002 Matsushita Electric Industrial Co., Ltd. All Rights Reserved.

Disclaimer

Computer specifications and manuals are subject to change without notice. Matsushita Electric Industrial Co., Ltd. assumes no liability for damage incurred directly or indirectly from errors, omissions or discrepancies between the computer and the manuals.

Trademarks

PS/2™ is a trademark of International Business Machines Corporation.
Microsoft, Windows and IntelliMouse are registered trademarks of Microsoft Corporation of the United States and/or other countries.
Intel, Pentium and SpeedStep are either registered trademarks or trademarks of Intel Corporation.
Adobe® and Acrobat® are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.
Panasonic is a registered trademark of Matsushita Electric Industrial Co., Ltd.

PCE0086A_2K/XP